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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
CORDRAY, DENNIS R	

ART UNIT	PAPER NUMBER
1791	

NOTIFICATION DATE	DELIVERY MODE
03/12/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/590,933	ESSER ET AL.	
	Examiner	Art Unit	
	DENNIS CORDRAY	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☒ Claim(s) *1* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/28/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities: in lines 4 and 5, a comma should be placed after the word "stock" and the comma after the word "metering," should be deleted. Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claim 9 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 9 provides for the use of hydrolyzed copolymers of N-vinylcarboxamides, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite

where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burke (5501774) in view of Hund et al (6797785).

Claims 1, 5-7 and 9: Burke discloses a process of making paper comprising preparing a aqueous thickstock (high consistency stock) consisting of a feed suspension of filler and cellulosic fiber, adding a cationic coagulating agent to the thickstock, making an aqueous thinstock (low consistency stock) by diluting the thickstock from the feed suspension, adding an anionic particulate material and a polymeric retention aid to the thinstock that is formed from the thickstock, and draining the thinstock (Abs; col 2, lines 4-22). The cationic coagulating agent has a molecular weight below about 2 million and can be a polyamine (col 4, lines 5-13).

Burke does not disclose polymers containing vinylamine units or the degree of hydrolysis. Burke does not disclose metering the vinylamine containing polymers. Burke does disclose a polyamine as a coagulant (col 4, lines 11-12).

Hund et al discloses that vinylamine containing polymers made by polymerizing vinylformamide as a homopolymer or copolymer followed by hydrolysis of from 20 to 70% of the vinylformamide units to vinylamine are used as coagulants or flocculants in papermaking. The vinylamine containing polymers result in improved retention, formation and draining (Abs; col 1, lines 24-45; col 3, lines 45-47; col 4, lines 11-16 and 27-30; col 5, line 60 to col 7, line 28). The disclosed degree of hydrolysis overlaps the claimed range.

The art of Burke, Hund et al and the instant invention is analogous as pertaining to the use of coagulants in papermaking. It would have been obvious to one of ordinary skill in the art to use vinylamine containing polymers as the coagulant in the process of Burke in view of Hund et al as a functionally equivalent option to obtain the benefits disclosed by Hund et al. Absent convincing evidence of unobvious properties due to the method of addition, metering the additives would have been obvious as a functionally equivalent option for addition.

Claim 4: Burke discloses the solids content of the suspension to be coagulated (thickstock)of from 2.5% to 10%. The solids content of the thinstock is from about 0.25% to 2% by weight (col 3, lines 24-32 and 56-59).

Claim 8: Burke discloses the addition amount of coagulant from 0.005% to 2% based on the dry weight of the suspension (col 4, lines 28-31).

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Auhorn et al (6083348) in view of Burkert et al (4444667) as evidenced by Langley et al (4753710).

Claims 1-3, 5-7 and 9: Auhorn et al discloses a method of making paper comprising metering polymers containing vinylamine units as a retention aid, drainage aid and flocculant to a main stream papermaking stock having a consistency from 0.1 to 15%, and diluting the stock in the headbox with up to 35% by volume, based on total headbox feed, of a dilution stream consisting of white water. The polymers have molecular weight from 10,000 to 2,000,000. The treated stock is drained to make paper (Abs; col 2, lines 13-26 and 34-44; col 5, lines 59-60). Where the retention system comprises cationic polymers (e.g.- polymers containing vinylamine units) and finely divided solids, the cationic polymers are all added to the main stream (high consistency) stock and the finely divided solids to the dilution stream that is mixed with the main stream in the headbox to form a low consistency stock. Alternatively, in some embodiments, from 60-95% of the retention aids are added to the main stream and the remainder of the retention aid is metered into the dilution stream that is mixed with the main stream in the headbox to form a low consistency stock (col 6, lines 22-34). The range of consistencies overlays the claimed ranges for high consistency stock.

Auhorn et al does not disclose the degree of hydrolysis of the polymers containing vinylamine units. Auhorn does disclose that the polymers containing vinylamine units are made by hydrolysis of homopolymers or copolymers of N-vinylformamide and references EP-071050 as teaching the process (col 2, lines 53-58).

Burkert et al (4444667) is in the same patent family as and will be used as the English translation of EP-071050.

Burkert et al discloses preparing a vinylamine containing polymer by homopolymerization of N-vinylformamide followed by hydrolysis of 10-90% of the formyl groups (Abs).

The art of Auhorn et al, Burkert et al and the instant invention is analogous as pertaining to the use of vinylamine containing polymers in papermaking. It would have been obvious to one of ordinary skill in the art to use vinylamine containing polymers having the claimed hydrolysis as retention aid, drainage aid and flocculant in the process of Auhorn in view of Burkert et al as suitable polymers disclosed by Auhorn et al.

Claim 8: Auhorn discloses that the amount of addition of retention aid, drainage aid and flocculant metered into the main stream is from 0.005% to 1% by weight of the dry paper (col 2, lines 41-44).

Claim 4: Although not explicitly disclosed by Auhorn et al, it would have been obvious to dilute the main stream stock sufficiently to provide a consistency below 1.5% as a typical consistency of papermaking thin stock (see Langley et al, col 8, lines 35-39 if evidence is needed).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3, 5-8 and 9 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 5, 6, 8-10 and 12 of copending Application No. 11/719826 in view of Auhorn et al. The claims of the copending application embody adding polymers containing vinylamine units, made by hydrolysis of N-vinylformamide units in the claimed range, to papermaking pulp, and dewatering (draining) the pulp. An anionic polymeric compound is also added. The copending claims do not recite adding the vinylamine polymer to high consistency stock, diluting the stock, and adding the anionic polymer to low consistency stock. Auhorn et al discloses a retention system comprising adding a polyvinylamine polymer to high consistency stock, diluting the stock with a dilution stream to form low consistency stock

and adding the anionic polymer (silica or organic polymer particles) with the dilution stream (Abs; col 2, lines 30-58; col 4, line 67 to col 5, line 23; col 6, lines 22-34). One of ordinary skill in the art would have found it obvious to add the vinylamine containing and retention aids as currently claimed in view of Auhorn et al.

This is a provisional obviousness-type double patenting rejection.

Claims 1-3, 5-6, 8 and 9 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2 and 6 of copending Application No. 11/574677 in view of Auhorn et al. The claims of the copending application embody adding polymers containing vinylamine units, made by hydrolysis of N-vinylformamide units in the claimed range, to papermaking stock, draining the stock, forming and drying a sheet. A cationic or nonionic polyacrylamide retention aid is also added. The copending claims do not recite adding the vinylamine polymer to high consistency stock, diluting the stock, and adding the cationic or nonionic polyacrylamide to low consistency stock. Auhorn et al discloses adding up to 95% of a mixture of retention aids comprising, in some embodiments, a polyvinylamine polymer and a cationic polyacrylamide to high consistency stock, and diluting the stock with a dilution stream to form low consistency stock and adding the remainder of at least 5% of the retention aids with the dilution stream (Abs; col 2, lines 30-65; col 4, line 67 to col 5, line 23). One of ordinary skill in the art would have found it obvious to add the vinylamine containing and retention aids as currently claimed in view of Auhorn et al.

This is a provisional obviousness-type double patenting rejection.

Claims 1-3, 5, 6, 8 and 9 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1-5 of copending Application No. 12/065688 in view of Auhorn et al. The claims of the copending application embody adding polymers containing vinylamine units, made by hydrolysis of N-vinylformamide units in the claimed range, to papermaking pulp, and draining the stock to form a sheet. Anionic particulates, including an anionic organic polymer are also added. The copending claims do not recite adding the vinylamine polymer to high consistency stock, diluting the stock, and adding the anionic polymer to low consistency stock. Auhorn et al discloses a retention system comprising adding a polyvinylamine polymer to high consistency stock, diluting the stock with a dilution stream to form low consistency stock and adding the anionic inorganic and/or organic polymer particles with the dilution stream (Abs; col 2, lines 30-58; col 4, line 67 to col 5, line 23; col 6, lines 22-34). One of ordinary skill in the art would have found it obvious to add the vinylamine containing and retention aids as currently claimed in view of Auhorn et al.

This is a provisional obviousness-type double patenting rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cutts (5676796), Dyllick-Brenzinger et al (6132558), Kuo et al (6273998), Zhang et al (6379501), Carr (2004/0250972) and Blum et al (2005/0247420)

disclose other papermaking processes comprising adding partially hydrolyzed vinylamine polymers to the stock.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DENNIS CORDRAY whose telephone number is (571)272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dennis Cordray/
Examiner, Art Unit 1791

/Eric Hug/
Primary Examiner, Art Unit 1791